

### 110.3 USA/Canada Collaborative Materials (powder form)

These materials, developed by Agriculture Canada in collaboration with NIST, are intended for use in evaluating analytical methods and instruments used for the determination of major, minor, and trace constituent elements, as well as proximates selected fatty acids (where appropriate), calories and vitamins in food/agricultural commodities.

Technical Contact: [rolf.zeisler@nist.gov](mailto:rolf.zeisler@nist.gov)

PLEASE NOTE: The tables are presented to facilitate comparisons among a family of materials to help customers select the best SRM for their needs. For specific values and uncertainties, the certificate is the only official source.

 [Printer Friendly](#)

RM	8412	8413	8414	8415	8416	8418	8432	8433	8435	8436	8437	8438
Description	Corn Stalk (Zea mays)	Corn Kernel (Zea mays)	Bovine Muscle Powder	Whole Egg Powder	Microcrystalline Cellulose	Wheat Gluten	Corn Starch	Corn Bran	Whole Milk Powder	Durum Wheat Flour	Hard Red Spring Wheat Flour	Soft Winter Wheat Flour
Unit Size	34 g	47 g	50 g	35 g	35 g	50 g	50 g	50 g	40 g	50 g	50 g	50 g
<b>Element (Reference Value concentrations are in mg/kg, unless noted by a single asterisk for mass fraction, in %)</b>												
Aluminum	-	(4)	1.7	540	3.7	10.8	1.9	1.01	(0.9)	11.7	2.1	2.3
Antimony	-	-	-0.01	-0.002	-	-0.01	-	-0.004	-	-	-	-
Arsenic	-	-	0.009	-0.01	-0.001	-0.02	-	0.002	-0.001	-0.03	-	-
Barium	-	-	-0.05	-3	-0.1	1.53	-	2.4	0.58	2.11	-0.04	-1
Boron	-	-	0.6	0.41	-0.2	-0.4	-	2.8	1.1	-	-0.2	-0.1
Bromine	-	-	1.1	-	-	-3.6	-	2.3	20	6.6	-	-
Cadmium	-	-	0.013	-0.005	0.00002	0.064	0.0003	0.012	-0.0002	0.11	-0.02	-0.03
Calcium	0.216*	42	145	0.248*	-5	369	56	420	0.922*	278	143	240
Cerium	-	-	-	-	-	-	-	-	-	-	-	-
Cesium	-	-	-5	-	-	-	-	-	-	-	-	-
Chlorine	0.244*	-450	0.188*	0.508*	80	0.362*	45	31	0.842*	680	500	640
Chromium	-	-	0.071	0.37	-0.05	0.053	(0.02)	0.101	-0.5	0.023	0.026	0.032
Cobalt	-	-	0.007	0.012	0.0017	0.01	0.0012	0.0006	-0.003	0.008	-	-
Copper	8	3	2.4	2.7	0.015	5.94	0.06	2.47	0.46	4.3	2.01	1.2
Fluorine	(0.65)	-0.24	-0.22	-	-0.005	-0.43	(0.02)	-	-0.17	-0.1	-0.02	-0.04

Iodine	-	-	0.035	1.97	-0.01	0.06	-	0.026	2.3	0.006	-	-
Iron	139	23	71.2	112	-2	54.3	(5)	14.8	1.8	41.5	31	29
Lanthanum	-	-	-	-	-	-	-	-	-	-	-	-
Lead	-	-	0.38	0.061	0.006	0.1	0.007	0.14	0.11	0.023	-	-
Magnesium	0.160*	0.0990*	960	305	-	510	31	818	814	0.107*	365	214
Manganese	15	4	0.37	1.78	-0.03	14.3	0.10	2.55	0.17	16	4.5	5.4
Mercury	-	-	0.005	0.004	-0.0002	0.0019	0.0011	0.003	-	0.004	-0.004	-0.002
Molybdenum	-	-	0.08	0.247	0.01	0.76	0.02	0.252	0.29	0.7	0.55	0.29
Nickel	-	-	0.05	-	0.05	0.13	0.02	0.158	-0.01	0.17	-0.2	-
Nitrogen	(6970)	-13750	13.75*	6.30*	200	14.68*	670	0.884*	4.187	2.707*	2.690*	1.756*
Phosphorus	-	-	0.836*	1.001*	-7	0.219 *	178	171	0.780*	0.29	0.137*	0.108
Potassium	1.735	0.357	1.517*	0.319*	-	472	45	566	1.363*	0.318	0.115*	0.148
Rubidium	-	-	28.7	-	-	-0.4	-	0.5	-16	2	-	-
Samarium	-	-	-	-	-	-	-	-	-	-	-	-
Selenium	0.016	0.004	0.076	1.39	0.002	2.58	0.0009	0.045	0.131	1.23	0.56	0.076
Sodium	28	-	0.210*	0.377*	-7	0.142	119	430	0.356*	16	7	7
Strontium	12	-	0.052	5.63	-0.02	1.71	0.18	4.62	4.35	1.19	-4	-
Sulfur	-	-	0.795*	0.512*	(10)	0.845	-200	860	0.265*	0.193*	0.183*	0.126*
Titanium	-	-	-	-	-	-2	-	-	-4	-5	-	-
Tungsten	-	-	-	-	-	-	-0.001	-	-0.002	-	-0.01	-
Vanadium	-	-	-0.005	0.459	-0.02	-0.04	-	0.005	-	0.021	0.02	-0.03
Zinc	32	15.7	142	67.5	0.1	53.8	0.22	18.6	28	22.2	10.6	5.8

Values in parentheses are not certified and are given for information only.